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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/161,770      | 09/29/1998  | JAMES PHILIP ANDREW  | 169.0976            | 8025             |

5514 7590 10/08/2002

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EXAMINER

DANG, DUY M

| ART UNIT | PAPER NUMBER |
|----------|--------------|
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2621

DATE MAILED: 10/08/2002

19

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/161,770

Applicant(s)

ANDREW, JAMES PHILIP

Examiner

Duy M Dang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 7/16/02.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 43-53,55-69,71-80,91-111 and 113-120 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.

- 6) ☒ Claim(s) 43-53,55-69,71-80,91-111 and 113-120 is/are rejected.

- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.

- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 16 July 2002 is: a) ☒ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)                      4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)                      5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 16.                      6) ☐ Other: \_\_\_\_\_

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**DETAILED ACTION**

1. Applicant's amendments filed 7/16/02 to cancel claims 1-42, 54, 70, 81-90, and 112 has been entered and made of record.
2. Thus, claims 43-53, 55-69, 71-80, 91-111, and 113-120 are currently pending.
3. Claim 43 is objected to because of the informality: in line 4, replace "retaining" by "remaining". Appropriation correction is required.
4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American

Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

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5. Claims 43-53, 55-69, 71-80, 91-111, and 113-120 are rejected under 35 U.S.C. 102(e) as being anticipated by Boliek et al. (U.S. Patent No. 6,141,446).

Regarding claims 43, and 75, Boliek teaches a method of compression data (see "A method and apparatus for compression and decompression" mentioned in col. 4, lines 35-37 and generally shown in figure 2), wherein said data (see "image data" shown at 201 in figure 2) comprises a plurality of transform coefficients (see the "wavelet transform" shown at 202 of figure 2 and mentioned at col. 9, lines 65 to col. 10, line 2 to produce "a series of coefficients" which satisfy the so-called "a plurality of transform coefficients"), and each coefficients is expressible in a format (see col. 9, lines 60-64. Note the "bit-significant representation" mentioned in line 61 of col. 9, lines 39-40 of col. 3, and shown at figure 12 corresponds to the so called "a format". Also refer to "unit that converts input coefficients into a sign/magnitude format" mentioned in col. 27 lines 26-28) including a plurality of bit symbols (see "symbols" mentioned in col. 10 lines 24-26), the format comprise a number of leading zero bit symbols and remaining bit symbols (i.e., "bit-significant representation" mentioned in col. 3 lines 39-40 and shown in figure 12: note that the "head bits" refers to the so called "leading zero bit

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symbols" and "tail bits" refers to the so called "remaining bit symbols"), the method comprising the steps of:

(a) entropy encoding a number of representative of said number of leading zero bit symbols (see "entropy coding" shown at 206 of figure 2 and mentioned at col. 10, line 25), not previous entropy coded (see "P" shown in figure 13), of a current transform coefficient based on a number of coefficients or part thereof surrounding said current transform coefficients (see figure 13 which shows the neighborhood coefficients for every coefficient of a coding unit according col. 3 lines 41-42); and

(b) processing another transform coefficient, not previous entropy coded, in accordance with step (a) (i.e., the "processing logic" mentioned in col. 29 lines 1-39 and detailed in figure 21 for repeating or processing another transform coefficient).

The advanced statements as applied to claims 43 and 75 with regard to Boliek above are incorporated herein. Boliek further teaches repeating entropy coding a predetermined number of times for the current transform coefficient (see items 2104 and 2110 of figure 21) as required by claims 51 and 93; and a method and an apparatus for decompressing data (see col. 4, lines 35-37;

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and col. 9, lines 42-43) as required by claims 59, 67, 101, and 109.

The advanced statements as applied to claims 43, 51, 53, 67, 75, 93, 101, and 109 with regard to Boliek above are incorporated herein. Regarding claims 117-120, Boliek further a computer program product (see col. 5, lines 13-15) including a computer readable medium (col. 5, line 16) having recorded thereon a computer program (see col. 4, lines 14-15) for compressing/decompressing data (see col. 4, lines 35-37; and col. 9, lines 42-43).

Regarding claims 44, 52, 60, 68, 76, 94, 95, 102, and 110, Boliek further teaches wherein the entropy encoding of the number representative of the number of leading zero bit symbols of a current transform coefficient (see figure 12 and item 206 (entropy coding) of figure 2. Note that the "bit-significant representation" shown in figure 12 refers to the so-called "number of leading zeros") is based on a context of a number of transform coefficients or part thereof surrounding the current transform coefficient (see figure 13 and col. 23, lines 1-9 and figure 19).

Boliek further teaches quantizing said transform coefficients (see item 203 (quantization) of figure 2) as required by claims 45, 53, 61, 77, and 95; inversed quantizing

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(Refer to "compression/decompression" mentioned in col. 9 lines 2-3 and "quantization" shown at 203 in figure 2. Note the decompression is responsible for decoding previous encoded data according to col. 9 lines 4-6. Thus, the "inversed quantization" is inherently included in decompression in order to decode properly the previous encoded data) as required by claims 103 and 111.

Boliek further teaches wherein said representative number equals the number of leading zero bit symbols (see figure 12: Note that the "bit-significant representation" shown in figure 12 refers to the so-called "number of leading zero bit symbols") as required by claims 46, 62, 78 and 104; said context (see "target" in figure 19) is determined from an arrangement of surrounding transform coefficients (see figure 19: "type A" and "type B" coefficients which are used to determine "target") as required by claims 47, 63, 79, and 105; said surrounding transform coefficients are previously encoded transform coefficients (see figure 19. The "type A" and "type B" corresponding to the so called "surrounding transform coefficients") as required by claims 48, 64, 80, and 106; said context is based on the number of non-zero transform coefficient surrounding said current transform coefficient (see figure 13 and col. 23, lines 1-9; figure 19 (note the "target" and "type

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A" and "type B" coefficients) and "entropy coding" 2108 of figure 21. Note that the "P" coefficient shown in figure 13. Also see figure 24: Note that the coefficients "SD", "DS", "DD" refer to the so called "non-zero coefficients surrounding said current transformed coefficient") as required by claims 49, 65, 91, and 107; encoding said remaining bit symbols (see "tail bit" in figure 12) as required by claims 50, 66, 92, and 108.

Regarding claims 55, 71, 97, and 113, Boliek further teaches said context of surrounding bit symbols includes information as to whether or not a most significant bit of at least one transform coefficient spatially adjacent, to the current transform coefficient, has been encoded (see figure 13 and 18-19. Note symbols surround symbol shown at "target" in figure 19).

Regarding claims 56-58, 72, 73, 74, 98, 99, 100, 114-116, Boliek further teaches wherein said transform coefficients are represented in a bit-plane representation (see col. 9, lines 58-64) and surrounding bits are bits in a current bit-plane (see col. 5, lines 59-62) as required by claims 56, 72, 98 and 114; an arithmetic coder (see col. 5, lines 46-48) as required by claims 57, 73, 99, and 115; discrete wavelet transform (see col. 8, lines 35-40) as required by claims 58, 74, 100, and 116.



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6. Applicant's arguments filed 7/16/02 have been fully considered but they are not persuasive.

In response to applicant's remarks with regard to claims 43, 51, 59, 67, 75, 93, 101, 109, and 117-120 that Boliek does not teach the feature of "to encode coefficient by coefficient" as stated in page 17 two lines before the last line. It is noted that the features upon which applicant relies (i.e., encode coefficient by coefficient) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). In addition, the examiner believes that Boliek does teach encoding each coefficient. For example, in column 24 lines 18-19 of Boliek states "each coefficient is coded independently."

Applicant further argues that Boliek does not teach "entropy encoding a number representative of the number of leading zero bit symbols of a current transform coefficient" as stated in page 17 last line to page 118 line 2. The examiner disagrees to applicant's remarks because Boliek does teach these claimed features as clearly pointed out in the rejection section above.

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7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Duy M Dang whose telephone number is 7033051464. The examiner can normally be reached on Monday-Thursday from 6:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo H Boudreau can be reached on 7033054706. The fax phone numbers for the organization where this application or proceeding is assigned are 7038729314 all communications.

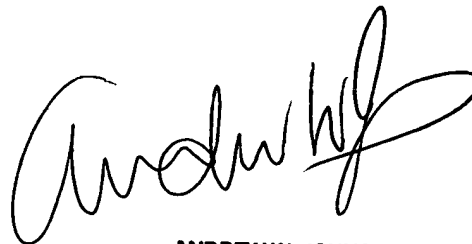
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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 7033060377.

*dm*

dmd

10/3/02

A large, stylized handwritten signature in black ink, appearing to read 'Andrew W. Johns'.

**ANDREW W. JOHNS  
PRIMARY EXAMINER**